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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,190	10/28/2003	Wolfgang Heinrich Alberstadt	81643/LPK	6577

7590

03/17/2005

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EXAMINER
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LEE, PETER

ART UNIT	PAPER NUMBER
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2852

DATE MAILED: 03/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EX

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/696,190	ALBERSTADT ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Peter Lee	2852	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,4 and 6-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 6-8 is/are rejected.
- 7) ☒ Claim(s) 4 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onishi (JP 2000214712) in view of Nagafuji (US pg pub 2002/0051662).

Onishi teaches a fixing roller (fig. 2 part 31) with a heat roller installed within (fig. 2 part 33; note paragraph [0019]) for a printer with internal heating element contact members (fig. 2 parts 382 and 412; note paragraph [0038]) (ie. internal heating elements), which has a housing around the said rollers (fig. 2 part H; note paragraph [0022]) (ie. cylindrical shaped body) and which has flanges (fig. 2 parts 37 and 40; note paragraph [0019]) that close off the ends, comprising: a connection that incorporates bearings at both ends (fig. 2 parts 58 and 59; note paragraph [0022] and [0028]), for the heat roller and flanges, that allow for revolving of the housing (ie. moveable in a rolling motion).

Onishi does not teach the said bearing member being in an approximately ball shape that is movable in a rolling motion to balance out, in every direction, environmentally induced changes.

Nagafuji teaches a similar fixing apparatus with a heating roller and pressure roller (fi. 2; note abstract). The fixing roller (fig. 3 part 12) is allowed to rotate due to ball bearings (fig. 3 part 16) that are configured around the circumference of the roller at each of the two axial ends.

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Although in fig. 3, part 16 does not take on the shape of a ball, in the specification they are referred to as “ball bearings”. Therefore it is taught that they are substantially ball shaped, and thus are able to balance out, in every direction possible, environmentally induced changes. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the bearing members found in the fixing apparatus of Onishi be of a ball shape as explicitly taught in the fixing apparatus of Nagafuji. One of ordinary skill in the art would have been motivated to use the ball shaped bearings because the ball bearings can avoid giving an excessive load to the fixing roller, which is advantageous in any situation but especially when used in a high speed image forming apparatus as would be wanted (page 4 paragraph [0052]).

3. Claims 1, 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onishi (JP 2000214712) in view of Miller (US 4506936).

Onishi teaches a fixing roller (fig. 2 part 31) with a heat roller installed within (fig. 2 part 33; note paragraph [0019]) for a printer with internal heating element contact members (fig. 2 parts 382 and 412; note paragraph [0038]) (ie. internal heating elements), which has a housing around the said rollers (fig. 2 part H; note paragraph [0022]) (ie. cylindrical shaped body) and which has flanges (fig. 2 parts 37 and 40; note paragraph [0019]) that close off the ends, comprising: a connection that incorporates bearings at both ends (fig. 2 parts 58 and 59; note paragraph [0022] and [0028]), for the heat roller and flanges, that allow for revolving of the housing (ie. moveable in a rolling motion).

Onishi does not teach the said bearing member being in an approximately ball shape that

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is movable in a rolling motion to balance out, in every direction, environmentally induced changes.

Miller teaches a cylindrical tubular body that rotates about a bearing assembly that resembles the fixing roller assembly taught by Onishi. The bearing assembly taught by Miller utilizes bearing balls (fig. 1 part 34) (ie. ball shaped connecting elements) for balancing out, in every direction possible, environmentally induced changes. Miller also teaches the roller tube body (fig. 1 part 12) having attached to it an annular portion (fig. 1 part 28) (ie. fuser body has an annular groove) for holding the bearing balls. Onishi and Miller are seen to be analogous art because they are from the same field of endeavor relating to a mechanism and apparatus arrangement that allows for rotation using ball bearings. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the fuser roller apparatus as taught by Onishi to resemble the bearing assembly taught by Miller. One of ordinary skill in the art would have been motivated to do so in order to provide an inexpensive and highly effective conveyer roller and bearing assembly (col. 1 lines 45-50).

4. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onishi in view of Miller as applied to claim 3 above, and further in view of Chen (US pn 6224166).

Onishi in view of Miller teach all of the limitations regarding this and prior claims as seen above.

The invention of Onishi modified by Miller does not teach the flange member having a quarter circular shaped offset matched up to the connecting element, nor do they teach the flange

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and fuser roller body having chamfers, having a range of angles between 0-45 degrees, on the edges of the groove members that contain the connecting element.

It is Chen who teaches a rotating connection involving ball bearings where the inner race portions (fig. 2 and 3 parts 24 and 22) (ie. flange) and outer race elements (fig 2 parts 28 and 38) (ie. fuser roller body) are seen to have chamfered edge sections where the ball bearings (fig. 3 part 34) are placed in between. Further, the chamfered inner race portions can be seen to be essentially in the form of a quarter circle so as to adapt to the shape of the ball bearings (ie. connecting elements). The angle of chamfer found in Fig 3 of Chen can be seen to be essentially the same as seen in the drawings of the application, and therefore meet the limitation of being between 0 and 45 degrees.

The teachings of Onishi in view of Miller, and Chen are analogous art because they are from the same field of endeavor being a mechanism and apparatus arrangement that allows for rotation using ball bearings as a connecting element. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the chamfered inner and outer race elements, as seen in Chen, to put into the revolving invention taught by Onishi in view of Miller. One of ordinary skill in the art would know that this configuration for bearing support between 2 moveable members relative to each other is well known in the art. It is known that this configuration allows for greater strength of the rotating apparatus (col.3 lines 25-30).

***Allowable Subject Matter***

5. Claims 4 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

Applicant's amendments to the claims have necessitated the examiner to enter new prior art references to make a Final Rejection.

6. Applicant's arguments with respect to claims 1 and the stemming dependent claims have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues on page 5 and 6 that by now amending the claim language to recite a "substantially ball shaped connecting element" into claim 1 and then explaining that the ball shaped connecting element will allow for, "rolling motion to balance out in every direction possible environmentally induced changes", will make the claims allowable. However, the limitation of the connecting element being of a ball shape originally found in claim 2 and now amended to be part of claim 1, has already been addressed by the prior art reference Nagafuji (US 2002/0051662) which teaches the use of ball bearings. In addition, examiner has included another reference previously stated as pertinent prior art, Miller (US 4506936), which teaches the bearing ball assembly that reads upon the amended claim limitations.

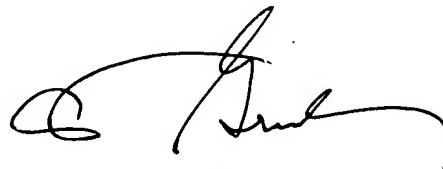
Claims 2, 5, and 10 have been canceled. Examiner enters and has reviewed the amended claims 1, 3-4, and 6-9. Amendments to the specification are entered.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Lee whose telephone number is 571-272-2846. The examiner can normally be reached on mon-fri 9:00 am-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on 571-272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PL 3/11/2005



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